



HIGH ENERGY SOLAR SPECTROSCOPIC IMAGER

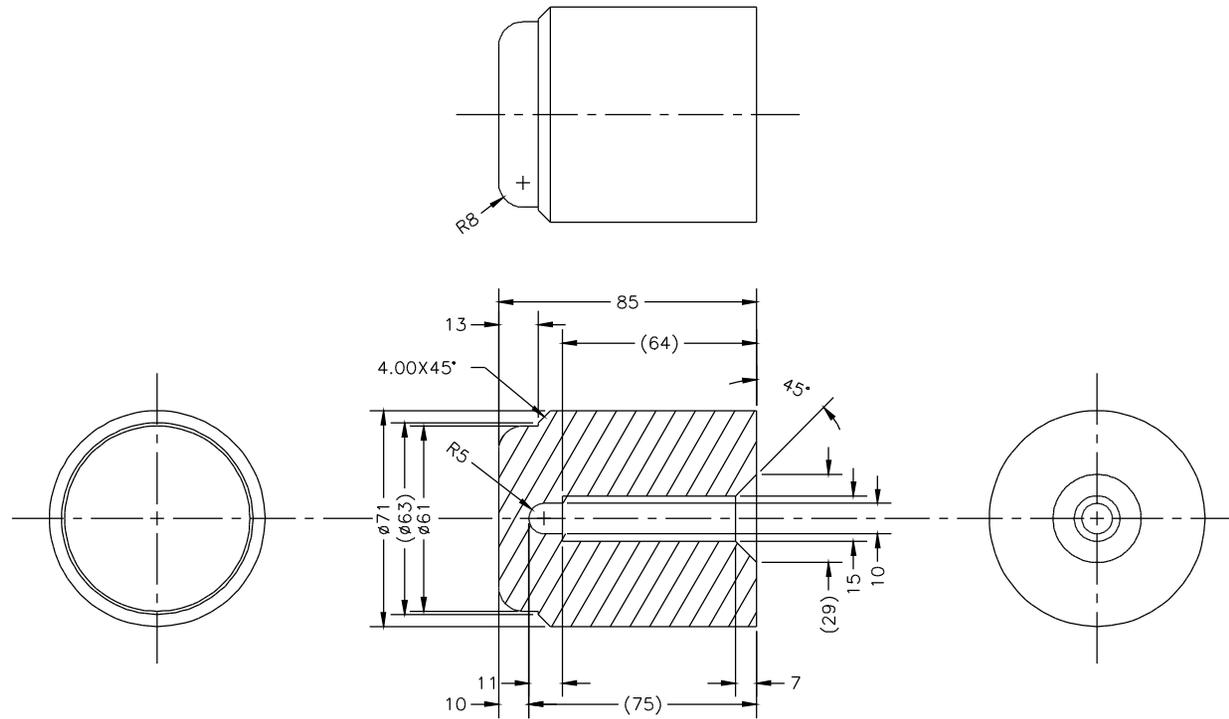
HSI-GED-000B: Specifications for HESSI germanium detectors

Revision B: 11/2/98

The enclosed drawing summarizes the mechanical specifications for the HESSI detectors. The two angles marked 45 degrees (on the upper/outer and lower/inner parts of the detector) should be as close as possible to this value. Variations of up to +/- 1.0 mm on each germanium surface are acceptable (i.e. +/- 2 mm in diameters and lengths, +/- 1 mm in radii), but it is desirable to have the variation a factor of two smaller. The exception is the overall detector length, which should merely be as close as possible to 85 mm and not greater than this value. ORTEC will inform UCB of the approximate anticipated length of each detector as soon as that information is available. The "bulletizing" radius on the upper outside corner of the detector, marked "R8.00", can range from 6mm-8mm. The shape of the upper end of the bore, shown as a hemisphere of radius 5mm ("R5.00"), is left to the discretion of ORTEC, as long as the distance from the tip of the bore to the front surface is within the range 7-10mm. Other specifications are as follows:

- 1) The impurity concentration must be such that each detector depletes between 2000 V and 4000 V bias.
- 2) The impurity concentration should vary by no more than $5 \times 10^9 \text{ cm}^{-3}$ as a function of radius.
- 3) The inner bore must be segmented with the step geometry patented by ORTEC (as shown in the drawing).
- 4) Standard ORTEC passivation is required on the intrinsic surface at the bottom of the detector.
- 5) The energy resolution of the rear segment must be better than 2.5 keV FWHM at the 1332 keV line of ^{60}Co using the best available electronics.

REVISION	DESCRIPTION	DATE
B	INCREASE BORE TO 64mm FROM 61	10/98



U.S. STD. THIRD ANGLE PROJECTION



ALL DIMENSIONS IN mm

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS BILATERAL TOLERANCES ARE: X = 1 mm ANGLES SURFACES X = .1mm 0.5°	MATERIAL	N/A	DRAWN	P. TURIN	CONTRACT /BUDGET NR	HESSI	TITLE	HESSI Ge DETECTOR	SHEET	1/1	SPACE SCIENCES LABORATORIES
	FINISH	N/A	DATE	2/16/98	SCALE - DO NOT SCALE -	1:2	DRAWING NR.	DETECTOR	REVISION	B	UNIVERSITY OF CALIFORNIA, BERKELEY BERKELEY, CA 94720 (415) 642-7297